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GAME TO ~~PLAY~~ LEARN

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“21st Century Learning” and “21st Century Skills” are two of the most commonly used phrases in education today, but what do they really mean? More importantly, what do they mean in terms of your child’s success?

When hearing the term “21st Century Learning,” many conjure images of fancy computer labs and classrooms equipped with smart boards. Others think in terms of cutting-edge software and Web 2.0 tools that allow students to create, collaborate and publish online. While these are all tools that are reshaping our culture, simply learning *how* to use them does not prepare students to successfully adapt to a constantly changing world. The heart of “21st Century Learning” is not about the tools, it is all about learning *how* to **learn**. Helping our students become proficient and independent life-long learners is central to their success in navigating through uncharted change.

Pat Bassett, President of the National Association of Independent Schools, identifies five essential skills for success in the 21st Century: creativity, critical thinking (problem-solving), communication, collaboration and character (citizenship). While these skills do not always get the priority they deserve in a culture largely driven by content mastery and test scores, they have always been an integral part of our mission at The Elisabeth Morrow School. Following that mission has served us well in navigating rapid change and keeping our program relevant. Before adopting new technology or creating new curriculum, we always measure how well it will help us achieve those fundamental goals.

Over the last ten years, emerging technology has opened new modes for communication. Our school responded in 2003 by creating curriculum designed to help students understand and use multimedia effectively. We felt it was important that students be able to express their ideas as clearly and persuasively through images, sound and video as they do using the written word. Knowing that technology would continue to evolve, we chose to focus on fostering the skills of communication rather than teaching how to use specific tools. Our early work in this field was ahead of the curve and, subsequently, has earned us a reputation as a leader in teaching media literacy. That curriculum continues to serve our students well today.

As we move forward, we constantly look for authentic ways to bridge technology with opportunities to develop essential skills and proficiencies in learning.

One of the most unexpected vehicles for doing this is through the use of games. At first, this may seem counterintuitive, as we tend to think of school as being a sanctuary for serious work. While we may not think of games as serious, there is much that they can teach us about learning. In fact, they offer a unique platform to address all five skills that Mr. Bassett identified as essential for success. More important, a well-designed game engages the player in a constant cycle of learning. As players master each new level, they are skillfully guided to tackle more complex tasks. The challenges are carefully structured to build skills by having players apply previously gained knowledge to new problems. If you have ever played a game or watched a gamer play, you have observed the inordinate amount of time that can be spent on mastering a new challenge.

New Media: Goldmines for Learning

In 2009, the National Telecommunications and Information Administration formed an “Online Safety and Technology Working Group” to promote online safety for children. The committee’s recommendations called for children to work online with trusted adults in order to help them form healthy and safe norms. Think of it in terms of learning to drive a car. We do not give teenagers a few lectures on driving safety, throw them the car keys and turn them loose. That would be insane. Instead, we spend a great deal of time teaching, modeling and driving with them before they are allowed to drive independently. We need to adopt the same attitude with technology. By carefully selecting technology that young people use in their everyday lives, we can leverage those platforms to engage students, develop essential skills and learn core subjects while modeling appropriate behavior.

Virtual worlds and massively multiplayer online games (MMOGs) are two platforms that can help us accomplish these goals. Students love them and innovative educators see these spaces as goldmines for learning.

Virtual worlds are 3D spaces that allow users to interact with each other using avatars. These spaces give students a unique opportunity to participate in creating their own learning environments. Each world typically starts with land, sky and water and is



programmed with a physics engine that simulates gravity, weather and light cycles. Users transform the landscape and create all of the buildings, vehicles and other objects that populate that space. These objects can be programmed to perform behaviors that interact with the environment and the other avatars. The complexity of each building is only limited by the user's imagination and skill.

Lessons within a virtual world typically start with a simple challenge, such as designing a community center. Things quickly become complicated when constraints are added, such as limiting the number of building units students are permitted to use or insisting that everyone agrees on the design before the building starts. Students love the opportunity to stretch their imagination and show what they have created. The complexity of their building grows as they become inspired by each other. It is amazing to watch how freely they share their newly gained knowledge. There is a constant buzz, as students move about the room helping each other and sharing what they have learned. The work is so complex that it is impossible for anyone to be an expert in all areas. The community only thrives when each member contributes his/her area of expertise to the group. Arising conflicts and disagreements become part of the learning process, as students negotiate and resolve their own problems.

MMOGs provide a different kind of learning opportunity. Using scripted stories, these platforms allow players to interact with others online as they complete challenging tasks within a storyline. Since many quests require a team to successfully complete the task, the ability to collaborate, communicate and solve problems is critical. Each character specializes in a specific set of talents. Players have to manage a great deal of information and adeptly juggle multiple skills in order to play optimally. Much like sports, team challenges are only successful when each member performs his/her job well. These games are highly engaging and incredibly complex.

What Makes a Game a Learning Tool?

In choosing MMOGs, we look first at safety followed by what the game will deliver in terms of complex, engaging and imaginative play. For grades 4–6 we have been using **Quest Atlantis**, a game designed exclusively by educators. The platform allows students to interact with teachers and students from around the world, as they help the “Atlantians” rebuild their “Arch of Wisdom.” In middle school, **World of Warcraft** offers a more sophisticated storyline with all the action required to engage young teenagers. On the other hand, do not be fooled, just because it is fun does not mean that there is not complex learning taking place. Students have to learn teamwork quickly to make progress, and there is little tolerance for “slackers.”

We have added two new games this year, **LEGO Universe** and **Minecraft**. Both represent a new kind of game design that is a hybrid of virtual world and

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MMOG, offering a mix of scripted play and the ability for the user to create content.

LEGO has raised the bar for online play with their first MMOG. **LEGO Universe** is a graphically beautiful game designed to inspire creativity. The storyline calls for players to work together to save imagination. Similar to other MMOGs, players customize their characters and specialize in a specific set of skills. Diversity is always helpful when teaming up to complete complex tasks such as smashing dragons. LEGO breaks away from traditional MMOGs by giving players their own property where they can build using virtual LEGO bricks. Additionally, basic programming skills are introduced as players give their creations "behaviors" using a child-friendly interface. All of this is done with safe play as a first priority. Chat is kept appropriate through a game filter that allows only pre-approved vocabulary. Community monitors are online 24/7 to keep an eye on the play and immediately address any complaints of abuse.

We use **LEGO Universe** in grades 4-8. One of the most fascinating things to observe is the role-playing that takes place both in and out of the game. This is true no matter what the age. There is a constant level of chat as players move seamlessly between stepping into the role of the character and back to reality in order to discuss strategies and provide help to fellow players. Once, the entire class spent over 30 minutes working together to complete a single group challenge. They continued to work as a team, repeating the task several times until everyone earned the achievement. Online games are often thought of as solo activities, but nothing could be further from the truth when playing MMOGs.

Minecraft is one of the most unusual and compelling platforms that we use. When you first look at the archaic graphics it is hard to imagine why students are so passionate about this game, but they are. It is actually more of a virtual world than a game because there is no story or script. What sets it apart from other virtual worlds is the constant threat of danger. The day/night cycle is accelerated to intervals of 15 minutes, and when it is dark the monsters come out.



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Each **Minecraft** world starts as an untamed wilderness filled with creatures both docile and dangerous. Players "mine" the materials required for construction and "craft" tools needed for building and survival. Resources may be scarce or hard to locate. One runs the risk of losing everything that has been collected if their avatar is killed. There are plenty of opportunities for

players to stretch their imagination if they can find the resources and survive the monsters that lurk in the dark.

The open nature of play in **Minecraft** is excellent for schools. Learning to build is easier than most other virtual worlds. This makes it accessible for younger players. Additionally, private worlds can be created for each class and

customized according to specific goals. Monsters can be turned off, and players given unlimited resources for building. We currently use **Minecraft** with grades 4-8 but have plans to introduce it in grades 2-3 later this school year.

Worldwide, **Minecraft** has generated one of the most creative and innovative communities in gaming. Dr. James Paul Gee, Professor of Literacy at Arizona State University, maintains that the real literacies for the 21st Century are developed within these interactive communities that grow beyond the game. We have observed that with our own students as well. They like to research changes in the new updates and compete to find the coolest “mods” (programs created by community users to modify the

game). Students often approach us with suggestions for game play or ideas for projects. They watch videos online documenting incredible feats of construction and then try to emulate them in class. While we maintain project wikis to document the work we do on all platforms, some of the **Minecraft** students have taken ownership of their wiki, customizing it to meet their needs.

Powerful Results

Educators are becoming increasingly interested in understanding the connection between playing games and learning. Over the last three years, our students have shared their work at four international online education conferences. They were

also invited to speak at a conference held at Kean University. Teachers at The Elisabeth Morrow School are welcomed to play with the students as part of their on-going professional development. It is a positive opportunity for both students and teachers to interact in a way where their roles (as teachers and students) can be interchangeable. In this way, games level the playing field for learning. Adults can find it extremely humbling the first time they play a MMOG. They typically walk away with a new insight about the complexity of the game, gaining appreciation for the skills it takes to play successfully.

It is important that parents also understand this technology. If we are to help children develop healthy and safe norms online, we need the entire community involved. At school, we provide safe spaces and play alongside our students. Students want to continue to play at home and often ask parents to create accounts or purchase the games that we use in school. As always, it is important that parents be aware of where their children play online. We encourage parents to ask questions, observe play and even join the game.

Virtual worlds and MMOGs hold some important keys to keeping our schools relevant in a rapidly changing world. We have observed and documented the learning that takes place in these unusual spaces. It is clear that they are conducive to fostering essential 21st Century Skills. Students find working and playing in these spaces highly engaging. When given a challenge, they often exceed the expectations of the assignment. Beyond the academic lessons, students just want to play. When they are given the time and opportunity to do this, they astonish us with the complexity of their ideas and how much time they are willing to invest in making them a reality. It is powerful to watch them take ownership of their own learning as well as take responsibility for solving their own problems. Clearly, play is an essential part of learning in the 21st Century. 🌸

Marianne Malmstrom, was recently selected as a National Association of Independent Schools, Teacher of the Future – recognizing expertise and innovation in teaching technology.



Elisabeth Morrow School Wikis:

Tomorrow Island (Teen Second Life) - <http://tomorrowisland.wikispaces.com>

The Gnome Project (Open Sim) - <http://gnomeproject.wikispaces.com>

Saving the Universe (LEGO Universe) - <http://savingtheuniverse.wikispaces.com>

Morrowcraft (Minecraft) - <http://morrowcraft.wikispaces.com>

Additional Resources:

NTIA Online Safety and Technology Working Group 2009-2010 -

<http://www.ntia.doc.gov/legacy/advisory/onlinesafety/index.html>

Quest Atlantis - <http://www.questatlantis.org>

World of Warcraft in School - <http://wowinschool.pbworks.com>

PBS Frontline, Digital Nation - Dr. James Paul Gee talks about, "The Gamer's Edge" - <http://bitly.com/sUUBKd>

About the Author



Marianne Malmstrom has 30 years experience as a classroom teacher and administrator. Fascinated by emerging technology, she believes that we must critically select and pair promising technology with sound pedagogy if we are to keep education relevant. As a technology teacher for The Elisabeth Morrow School, Marianne follows shifts in how students use technology in their everyday lives. With this information, she then draws on her extensive teaching experience to create new learning environments designed to develop essential 21st century skills and literacies. Over the past ten years, Marianne has worked with colleagues to develop a school-wide multimedia program that has received international recognition including awards from both WLIW's *Celebration of Teaching & Learning* and Flat Classroom Project's *NetGen Challenge*. Her current work is focused on using virtual worlds and massively multiplayer online games (MMOGs) to foster healthy norms in online communities, while giving students opportunities to collaborate and solve problems in highly creative spaces.

This year, Marianne was selected by the [National Association of Independent Schools \(NAIS\)](#) as part of its *Teachers of the Future* Program. As one of only 25 teachers nationwide chosen for the program, she will lead an online discussion forum designed to share innovative ideas and teaching techniques. Dr. David Lowry, Head of The Elisabeth Morrow School, comments that, "Marianne models an unceasing desire to continue learning herself and to challenge potentially outdated beliefs about what education should look like."

About the Article

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